

quadrant; 12th, 29 spots in two groups, the northern group having 23 spots, 5 prominent, increased wonderfully in past 24 hours; 13th, 14 spots in two groups; 14th, 9 spots in 2 groups very near western edge; faculae in both; 22nd, 3 small spots in one group about one-sixth of sun's diameter east of center; 25th, about 15 spots in one group between center and west edge; 26th, 13 spots in 2 groups, new group of 5 spots at east edge; 27th, 21 spots in three groups; western group has 3 spots, one large; eastern group has 15 spots, finely prominent and filled with faculae; third group, near southeast margin, has 3 little spots; 28th, 22 spots in 2 groups, 20 spots, one large, in eastern group, southeast group disappeared; 29th, 26 spots in 2 groups, eastern group 18 spots; one group of eight small spots away south; 30th, 16 spots in eastern group, southern group disappeared; 31st, 19 spots in 2 groups; two little spots in faculae near east edge. Mr. J. Harcourt, at Wappinger's Falls, N. Y., reports:—10th, one group of 6 spots; 31st, at 8 a. m. and 2 p. m. one large spot and a small group. Mr. F. Hess, at various points in the San Juan Valley, Colorado, 10th, and 11th, one large and three small spots; 24th, 6 a. m., group of 9 spots near sun's center; 27th, 5 p. m. one large and one small spot near northeast limit; 28th, one large and two small spots near southeast limit; 29th, to September 6th, one large and one small spot; sun examined but no spots seen on the 25th. Observations were made throughout the month at Fort Whipple, Va., but no spots seen.

## NOTES AND EXTRACTS.

[From *Nature*, August 14th, 1879.]

The statistical review of volcanic phenomena during 1878, which Prof. Fuchs has recently published, and which forms the continuation of many previous statistical accounts of the same nature, shows the unusually large number of *twelve* eruptions in the course of the year. Most of them occurred in remote localities and gave evidence of the activity of volcanos which were generally but little known and which are all difficult of access." The following eruptions are mentioned in *Nature's* article: Mt. Vesuvius became active April 20th. A small flow of lava took place at the end of September and from November 1st to 9th.

Active and hitherto unknown volcanos were seen at the southern point of South America from January 10th to 18th. A great eruption occurred in Tanna Island, New Hebrides, on January 10th, lasting a short time and accompanied by a mighty tidal wave which inundated a great part of the Island. A second outbreak followed February 4th. Early in February an eruption happened in the island of Birara, group of New Britain. "The third eruption of February took place from the volcano Isluga in South America, \* \* accompanied by a fearful earthquake, and so great were the masses of lava ejected, that villages, \* \* more than five leagues distant from the volcano, were completely destroyed by the incandescent streams. Smaller eruptions occurred from Mt. Hecla during March; from Asamayama, Japan, and Cotopaxi in October; from Tapaco, the Situa and the Isalco in San Salvador." Important eruptions took place in the volcanic series of the Aleutian Islands. Raitea and Borabora, Society Islands are reported completely devastated by volcanic action. The well known mud volcano near Paterno, Sicily, was in eruption from December 10th to 31st, remaining active at the end of the year.

"The number of earthquakes reported during 1878, amounts to 103," in which only complete earthquake periods are counted. The most violent and destructive took place January 23rd, in Peru and Bolivia. That of October 2nd, in southern part of San Salvador, was also very violent."

*European Earthquakes.*—January 28th, North-western France and Southern England, January 16th, North-western Switzerland with repeated shocks. Other repeated earthquakes at Innsbruck January 3rd, 10th, 11th, February 2nd, August 9th; Gross Geran, January 2nd and March 25th; Lisbon, January 26th, 27th and June 8th; Premont repeated shocks, November 25th; Constantinople, Ismid and Brussa, from 19th to end of May. The Low Rhenish earthquake August 28th affected over 2,000 geographical square miles including Arnsbergh and Hanover in the north, Michelstadt and Odenwald to the south-east, Strassburg and Paris in the south, Brussels in the west and Utrecht in the north-west. "It is remarkable that the phenomenon was only noticed at the surface, \* \* not one of the eleven hundred miners working at a depth of three hundred metres at Altessen noticed the least shock."

[From *Nature* August 7th, 1879.]

"Geneva Society of Physics and Natural History, March 6th. M. Ph. Plantamour observed during the cyclone of February 20th, a notable depression of level of the lake of Geneva. The wind produced this effect of depression notwithstanding the diminution of atmospheric pressure indicated by the barometer, and which would tend to raise the level of the water."

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